No. 9500313

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Asgrow Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

*SOYBEAN*

*'A1923'*

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of Washington, D.C. this thirtieth day of May in the year of our Lord one thousand nine hundred and ninety-seven.*

*Attest:*

*Commissioner*
*Plant Variety Protection Office*
*Agricultural Marketing Service*

*Secretary of Agriculture*

REPRODUCE LOCALLY. *Include form number and date on all reproductions.* FORM APPROVED - OMB NO. 0581-005

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

*(Instructions and information collection burden statement on reverse)*

*The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a).*

*Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).*

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Asgrow Seed Company

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
XP1923

3. VARIETY NAME
A1923

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
2605 E. Kilgore Road
Kalamazoo, MI 49002

5. TELEPHONE *(include area code)*
(616) 384-5548

6. FAX *(include area code)*

**FOR OFFICIAL USE ONLY**

PVPO NUMBER: 9500313

FILING DATE: Sept. 12, 1995

FEES RECEIVED
RUNG AND EXAMINATION FEE: $ 2450.00
DATE: Aug. 14, 1995
CERTIFICATION FEE: $ 300.00
DATE: 09/22/95

7. GENUS AND SPECIES NAME
Glycine Max

8. FAMILY NAME *(Botanical)*
Leguminosae

9. CROP KIND NAME *(Common name)*
Soybean

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.) (Common name)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Delaware

12. DATE OF INCORPORATION
March 22, 1968

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Wayne L. Hoener
Asgrow Seed Company
7089-248-24
2605 E. Kilgore Road
Kalamazoo, MI 49002

Dr. Alan Walker
Asgrow Seed Company
5926 E. US HWY 14
Janesville, WI 53546

14. TELEPHONE *(include area code)*
(608) 755-1777

15. FAX *(include area code)*

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of the Variety
d. ☒ Exhibit D. Additional Description of the Variety
e. ☒ Exhibit E. Statement of the Basis of the Applicant's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository)*
g. ☒ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)?*
☐ YES *(If "yes," answer items 18 and 19 below)* ☒ NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☒ NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☐ YES *(If "yes," give names of countries and dates)* ☒ NO

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

| SIGNATURE OF APPLICANT *(Owner(s))* | SIGNATURE OF APPLICANT *(Owner(s))* |
|---|---|
| Wayne L. Hoener | Alan K. Walker |
| NAME *(Please print or type)* | NAME *(Please print or type)* |
| Wayne L. Hoener | Alan K. Walker |
| CAPACITY OR TITLE: Soybean Product Manager | DATE: 8/21/95 |
| CAPACITY OR TITLE: Director of Soybean Research | DATE: 8-25-95 |

ASGROW SEED COMPANY
PVP APPLICATION A1923 SOYBEAN
June, 1994

## EXHIBIT A
## ORIGIN AND BREEDING HISTORY OF A1923

| | |
|---|---|
| 1987 | Cross was made in Redwood Falls, Minnesota<br>Parentage: A2234/2/*BSR101 |
| 1987-88 Winter | F1 and F2 generations grown near Isabela, Puerto Rico |
| 1988 | F3 generation grown at Redwood Falls, Minnesota. Three hundred plants selected from a bulk population and threshed individually. |
| 1989 | Progeny Row Yield Trial (PRYT) A871568 A89-PY181 was selected for its uniformity in plant height, standability, and yield. This row was harvested in bulk and seeds were checked and verified for uniform seed coat luster and hilum color. |
| 1989 (Oct) | A871568 A89-PY181 was determined to be a unique and stable line. |
| 1990 | A871568 A89-PY181 was entered in a preliminary (R195-42) yield test conducted at a total of 4 locations in Minnesota and Wisconsin. |
| 1990 (Fall) | 100 F5 plants were selected and threshed individually. |
| 1991 | A871568 A89-PY181 was entered in the advanced V150 test conducted at 15 locations in 5 states.<br><br>48 sublines were grown in Redwood Falls, Minnesota in a Pure Row Block. |
| 1992 | A871568 A89-PY181 was entered in the advanced V150 test as experimental Stage II XR1923 conducted at 16 locations.<br><br>A 40-entry maintenance test was grown at Redwood Falls, Minnesota; Janesville, Wisconsin; and Kalamazoo, Michigan. |
| 1992 (Nov) | Four units of Breeder Seed were formed by combining top yielding entries from the test.<br><br>In December, 1 unit was sent to Puerto Rico for increase. |
| 1993 | XP1923 was entered into the advanced V150 yield test conducted at 16 locations. Foundation seed of XP1923 was produced near Clarion, Iowa. XP1923 was nominated for release and assigned the designation A1923. A1923 is uniform and stable within commercially acceptable limits based on trial observations since October, 1989. As with other soybean varieties, variants can occur for almost any characteristic during the course of repeated sexual reproduction. |

ASGROW SEED COMPANY
PVP APPLICATION A1923 SOYBEAN
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## EXHIBIT B
## NOVELTY STATEMENT CONCERNING A1923 SOYBEAN

To our knowledge the soybean varieties that closely resemble A1923 are A2234 and A1900.

1) Pod Wall Color

A1923= Tan
A2234= Tan
A1900= Brown

2) Protein/Oil

| | | | |
|---|---|---|---|
| A1923= | 41.5 | 19.9 | |
| A2234= | 41.2 | 20.5 | Ave of 8 |
| A1900= | 40.2 | 21.0 | Environments |

3) Seed Size

A1923= 2,475 seed/lb
A2234= 2,400 seed/lb
A1900= 2,700 seed/lb

4) Tolerance to Downy Mildew

A1923= 1.7
A2234= 2.3
A1900= 2.0

$\bar{x}$= 2.9
Std Err= .309
Range= 1.0-5.0

5) Seed Protein Electrophoretic Band

A1923 - Type A
A2234 - Type B
A1900 - Type A

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
*(Soybean)*

# OBJECTIVE DESCRIPTION OF VARIETY
## *SOYBEAN (Glycine max L.)*

| NAME OF APPLICANT(S) | TEMPORARY DESIGNATION | VARIETY NAME |
|---|---|---|
| ASGROW SEED COMPANY | XP1923 | ~~A~~1923 |

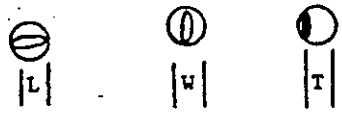
ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
9638-190-23
7000 Portage Road
Kalamazoo, MI 49001

FOR OFFICIAL USE ONLY
PVPO NUMBER
9500313

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

**1. SEED SHAPE:**

[2]




1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ **2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

**3. SEED COAT LUSTER: (Mature Hand Shelled Seed)**

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ **4. SEED SIZE: (Mature Seed)**

[1][9] Grams per 100 seeds

★ **5. HILUM COLOR: (Mature Seed)**

[6] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)*

★ **6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

★ **7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[1] 1 = Low 2 = High

★ **8. SEED PROTEIN ELECTROPHORETIC BAND:**

[1] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ **9. HYPOCOTYL COLOR:**

[4] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ **10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____



4

**11. LEAFLET SIZE:**

[3] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17')
3 = Large ('Crawford'; 'Tracy')

**12. LEAF COLOR:**

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton')
3 = Dark Green ('Gnome'; 'Tracy')

★ **13. FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

★ **14. POD COLOR:**

[1] 1 = Tan 2 = Brown 3 = Black

★ **15. PLANT PUBESCENCE COLOR:**

[2] 1 = Gray 2 = Brown (Tawny)

**16. PLANT TYPES:**

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton')
3 = Bushy ('Gnome'; 'Govan')

**17. PLANT HABIT:**

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will')
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ **18. MATURITY GROUP:**

[0][4] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V
9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ **19. DISEASE REACTION:** (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★ [0] Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★ [0] Bacterial Blight (*Pseudomonas glycinea*)

★ [0] Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★ [0] Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojina*)

★ [0] Race 1 [ ] Race 2 [ ] Race 3 [ ] Race 4 [ ] Race 5 [ ] Other (*Specify*) _____

[0] Target Spot (*Corynespora cassiicola*)

[1] Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

[2] Powdery Mildew (*Microsphaera diffusa*)

★ [2] Brown Stem Rot (*Cephalosporium gregatum*)

[0] Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

**19. DISEASE REACTION:** (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [0] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

★ [2] Race 1 [2] Race 2 [2] Race 3 [2] Race 4 [2] Race 5 [0] Race 6 [2] Race 7

[2] Race 8 [2] Race 9 [2] Other *(Specify)* 10, 11, 12, 13, 14, 17, 19, 20 & 24

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

★ [0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [0] Race 1 [0] Race 2 [1] Race 3 [0] Race 4 [ ] Other *(Specify)* _____

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [0] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[0] OTHER DISEASE NOT ON FORM *(Specify):* _____

**20. PHYSIOLOGICAL RESPONSES:** (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [2] Iron Chlorosis on Calcareous Soil

[0] Other *(Specify)* _____

**21. INSECT REACTION:** (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[0] Other *(Specify)* _____

**22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.**

| CHARACTER | NAME OF VARIETY | CHARACTER | NAME OF VARIETY |
|---|---|---|---|
| Plant Shape | A2234 | Seed Coat Luster | A2234 |
| Leaf Shape | A2234 | Seed Size | A2234 |
| Leaf Color | A2234 | Seed Shape | A2234 |
| Leaf Size | A2234 | Seedling Pigmentation | A2234 |
| | | | |

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

| VARIETY | NO. OF DAYS MATURITY | PLANT LODGING SCORE | CM PLANT HEIGHT | LEAFLET SIZE | | SEED CONTENT | | SEED SIZE G/100 SEEDS | NO. SEEDS/ POD |
|---|---|---|---|---|---|---|---|---|---|
| | | | | CM Width | CM Length | % Protein | % Oil | | |
| Submitted A1923 | 126 | 1.6 | 79 | 8.9 | 13.8 | 41.5 | 19.9 | 19 | 2.7 |
| Name of Similar Variety A2234 | 129 | 1.6 | 81 | 8.9 | 13.8 | 41.2 | 20.5 | 18 | 2.6 |

**PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:**


1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-$A_2$ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

ASGROW SEED COMPANY
PVP APPLICATION A1923 SOYBEAN
June, 1994

## EXHIBIT D
## ADDITIONAL DESCRIPTION OF VARIETY

A1923 is a late group I cultivar that possesses an outstanding combination of characteristics needed by producers in its maturity zone. It combines high yield potential, excellent standability, resistance to powdery mildew, good iron chlorosis tolerance, moderate tolerance to brown stem rot and resistance to many races of Phytophthora megasperma f. sp. glycinea conferred by the Rps1K alleles and Rps7 alleles.

ASGROW SEED COMPANY
PVP APPLICATION A1923 SOYBEAN
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## EXHIBIT E
## STATEMENT OF BASIS OF APPLICANT OWNWERSHIP

A1923 was originated and developed by Roger L. Lussenden, as Asgrow plant breeder. By agreement with Asgrow Seed Company, all rights to any invention, discovery or development made by employees are assigned to the company. No rights of such invention, discovery or development are returned to the employee.